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HIGHWAYS SECTION

PART ONE

HIGHWAYS OF CENTRAL AMERICA

GUATEMALA

and

EL SALVADOR

Prepared by
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THE HIGHWAYS OF

Guatemala

Prepared by JOSEPH L. FITZMAURICE

and

El Salvador

Prepared by ELISHA E. EARLY

Under the Supervision of

B. P. ROOT

C O N T E N T S

C O N T E N T S (CONTINUED)

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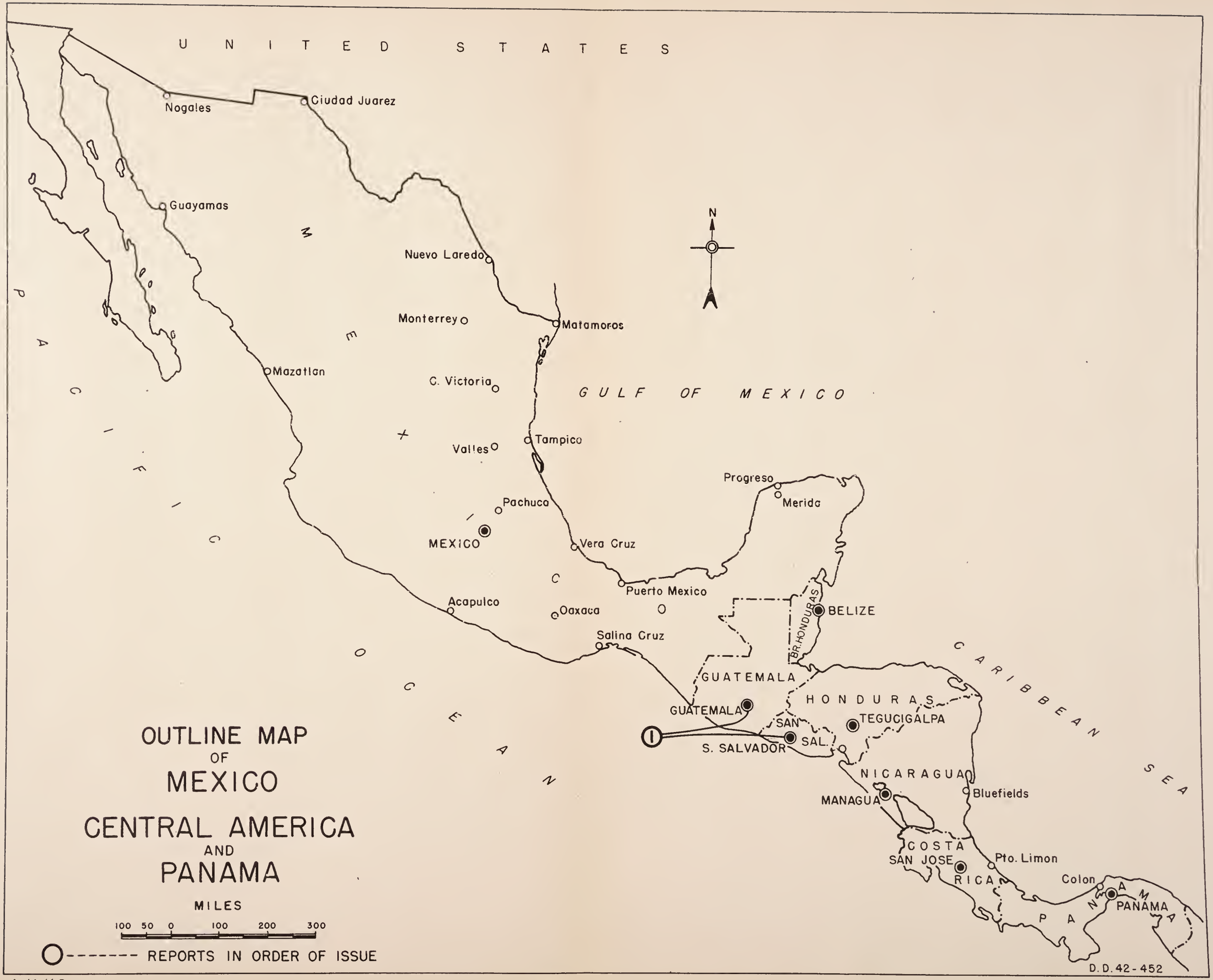
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2-15463

THE REPUBLIC OF GUATEMALA
(Republica de Guatemala)

The Republic of Guatemala is bounded on the west and north by Mexico and the Caribbean sea, on the east by British Honduras, Honduras, and El Salvador, and on the south by the Pacific Ocean. The national language is Spanish and its capital is Guatemala City, with 176,780 inhabitants. Other towns of importance are: Quezaltenango (30,125), Coban (26,774) and Zacapa (18,094). The monetary unit is the Quetzal which is on a par with the U. S. dollar. The chief ports are Puerto Barrios on the Atlantic side and San Jose and Champerico on the Pacific side. The principal railway is the American-owned International Railways of Central America with a total of 819 kilometers (510 miles). It connects Puerto Barrios with Guatemala City, San Jose on the Pacific, the National Railways of Mexico at Ayutla, and extends to El Salvador. All railroads are of 0.914 meters' (3 feet) gage. The total mileage of all lines is 1,027 kilometers (637 miles).

GEOGRAPHY AND CLIMATE

Guatemala has an area of 125,071 square kilometers (48,290 square miles). Except for the lowlands along the coast, the land lies at an altitude of 1,219 to 3,505 meters (4,000 to 11,500 feet). The climatic conditions along the two coast lines are of a typical tropical nature. The chain of mountains that traverses the central portion of the country sends out several spurs, which form upland plateaus. These plateau regions, healthful and invigorating, produce products of tropical and temperate zones. The country has beautiful landscapes, dense forests covered with tropical trees, and in the colder regions, woodlands of pine, fir, and cypress, waterfalls, lakes, rivers, and volcanoes, all of which form an imposing background to the panoramic scenes of the country.

Guatemala has many inland lakes, which fill old volcano craters or are situated on the plateaus of the mountain ranges. Because of its proximity to the Capital (one hour's ride), the best known is Amatitlan. It is divided into two parts by a railroad causeway. West of Lake Amatitlan is Lake Atitlan; it is 22 kilometers (16 miles) long and rests at the base of mighty volcanoes. The lake embraces several islands, and along it are situated 12 picturesque villages. The beauty of the lake and surroundings is beyond description.

GOVERNMENT

Guatemala has what is known as the unitary republican form of government with powers vested in a legislative, executive, and judicial branch. The National Assembly is composed of one chamber only. It consists of one representative for every 30,000 persons, or fraction thereof over 15,000; and is renewed every 2 years by halves. All persons over 21 years of age have suffrage. The President is elected by direct vote of the people for a 6-year term, and is barred from reelection for a period of 12 years. His advisors consist of a cabinet of seven secretaries and council of state composed of three councilors appointed by the assembly and four by himself. There is no vice president, but three "designados", elected yearly by the National Assembly, take the place of the President in the respective order named in case of the President's death or absolute inability to serve. The judicial branch of the Central Government consists of a Supreme Court, 16 appeal courts, and 28 courts of original jurisdiction. Judges of the courts of original jurisdiction are appointed by the President, but those of the Supreme Court and courts of appeal are appointed by the National Assembly.

POPULATION

According to the 1940 census, the population was 3,284,269 or about 73 persons per square mile. Current statistics show that about 60 percent are pure Indians, 21 groups descended from the Maya-Quiche tribe; most of the remainder are of mixed Indian and Spanish blood. The latter are the most active element economically and politically. The Indians supply most of the labor.

People of pure Spanish blood make up a negligible portion of the total population. At all times, immigration has been small, consisting largely of mixed bloods from neighboring countries and blacks from the West Indies. Such people as have emigrated from the United States to Guatemala have identified themselves with the economic developments of the country, especially the fruit industry and the railroads, and their contribution to the political strength of the nation has been slight. On the other hand, through intermarriage, German immigrants have allied themselves closely with Guatemalans and are very active in commerce and industry, especially in the production of coffee.

INDUSTRY

The Cordillera divides Guatemala into two unequal drainage areas. The smaller bordering the Pacific side, is well watered and fertile, between the altitude of 304.8 meters (1,000 feet) and 1,524 meters (5,000 feet), and is the most densely populated area of the Republic. On the other hand, the larger Atlantic drainage area is sparsely populated and is of little commercial importance at present except for the chicle gathering and timber cutting of the Peten, the coffee raising of the Coban region, and banana cultivation in the Motagua Valley and Lake Izabel district.

Most of the soil is quite fertile, and agriculture is the most important industry in Guatemala. Coffee is the principal crop, accounting for 70 percent of the total exports; coffee exports in 1939 were 1,029,758 quintals (104,416,461 pounds). Germans own and control about 40 percent of the coffee plantations, but the United States has taken 60 percent of the exports, with only 20 percent going to Germany in the past. Under the Inter-American Coffee Agreement Guatemala's quota for 1940-41 was 847,000 bags, 535,000 of which the United States imported. Next in importance after coffee are bananas, exports of which in 1940 totaled 8,208,517 bunches. Sugar production in 1939 amounted to 18,222 metric tons and is the subject of rigid export restrictions; corn (production 351,031 metric tons in 1939), beans (49,028 metric tons), and wheat (14,371 metric tons) are important domestic crops. Guatemala is, after Mexico, the largest producer of chicle, the gum which forms the basis for the United States chewing gum industry; output in the 1940-41 season was 2,700,000 pounds. The United Fruit Company maintains agricultural experiment stations for the purpose of encouraging crop diversification.

The Guatemalan forest area has an extent of 1,316,482 acres. The department of Peten is rich in mahogany and dye woods, but exports are inconsiderable owing to poor transport facilities. Immense swamps are covered with mangrove trees, from which tanning materials for military leathers are secured, but this source of wealth has not been tapped as yet, because the United States has been able to secure its requirements elsewhere. In the past the needed extracts came from the Far East because of the low labor costs in that area. Our present requirements are satisfied by the product harvested in Colombia.

MINERALS

Because of a lack of transportation facilities, mining has had little development in Guatemala. Among the minerals found is chrome, the mining of which has not proved profitable. Mines of gold, silver, copper, iron, lead, zinc, and antimony are known to exist in various sections, but they have been inadequately investigated. Placer gold mines are worked, and considerable silver is exported. The mining of mica is reported on a small scale, but it must be hauled 64 kilometers (40 miles) to a railroad. Some lead is shipped to the United States.

IMPORTS AND EXPORTS

In 1940, 74 percent of Guatemala's imports came from the United States and 2.4 percent from Great Britain; of the exports, in 1939, 70 percent went to the United States and 11 percent to Germany. The principal imports are cotton textiles, wheat flour, cotton yarns, petroleum products, medicines, trucks and motor cars, woolen and rayon textiles. The per capita value of trade in 1937 was $6.95 for imports and $5.35 for exports. In Table I are given the latest foreign commerce statistics for the latest 5 years available.

TABLE I

Value of Foreign Commerce in Quetzales, 1/ 1936-1940

Year	Imports	Exports
1936	11,511,947	15,106,264
1937	16,742,907	16,108,610
1938	16,761,388	16,336,263
1939	15,295,729	16,985,360
1940	12,666,970	12,039,492 2/

1/ One quetzal equals one United States dollar.
2/ A new system of customs valuation accounts partly for the drop in 1940.

CONCLUSION

The Guatemalans are justly proud of the public works program they have carried out in recent years. In order to memorialize the program, there was published in 1941 the descriptive monograph "Veres de Comunicacion," one part of which bore the title "Siete Mil Kilometros De Carreteras En Ocho Anos" (Seven Thousand Kilometers, or 4,350 Miles, of Road Construction in Eight Years). This work was all done during the term of office of General Jorge Ubico, as President. He was the impetus behind the program. Such an extensive program shows the progressiveness of the Guatemalans in modern road building. Although most of the roads built are of gravel construction, they have, nevertheless, helped to a considerable extent to alleviate transportation difficulties prevalent in Guatemala.

2-15463

The completion of the stretch of highway between Puerto Barrios and about half the distance to Guatemala City on the Puerto Barrios-Guatemala City Highway should provide a means of cheap transportation between the two cities. At present the International Railway of Central America operates between the two points, but the rates charged on commodity shipments are much too high for the economical transportation of low value products. It is hoped that the opening of the highway will effect a substantial reduction in the railroad rates along the line.

The President is very anxious to have completed the projected road extending t La Libertad in the Department of Peten. In this department are located the chicle and mahogany forests. When this highway is completed it will provide a cheap means of land transport for chicle to the port of Puerto Barrios.

The present highway transport services in Guatemala have, for several months, been severely handicapped by the lack of gasoline and oil, which must be imported. However, with the recent opening of the Suchiate River railway bridge the necessary fuels and lubricants may now be imported directly from Mexico. The shortage of rubber is another factor that must be considered in the plan to reestablish motor transport, even on a very limited basis.

With the Pan American Highway as the backbone of Guatemala's road system, now being improved and if the continued progress of construction and improvement on other roads is maintained, the future of Guatemala's highway system seems bright.

THE HIGHWAYS OF GUATEMALA

Road Mileage by Construction Types

Highway construction has had a modernizing and upbuilding influence in Guatemala. The movement for better roads began in the early twenties and was given impetus when Guatemalan delegates attended the Pan American Highway Conference in Washington and in Buenos Aires. All roads outside the cities are maintained by forces under the Director General of Roads. This official is responsible to the Minister of Agriculture. The country is divided into four districts, each headed by a chief engineer.

Little if any of the highway building in Guatemala has been of the higher type of construction, such as penetration macadam and concrete. Most of the roads are of gravel construction. The Inter-American Highway from the Mexican border to El Salvador is constructed of water-bound macadam.

Feeder roads in Guatemala are constantly being improved, and continual effort is made to bring them into the improved earth and gravel type as rapidly as possible with the materials available.

Except for the paved streets of Guatemala City, short stretches in a few other towns, and a portion of the road from the capital to Lake Amatitlan, all roads in Guatemala are of these types: unimproved earth and non-surfaced; improved earth, sand, clay, or gravel. Table II shows the mileage by types for 1936 and 1940.

TABLE II

Guatemalan Roads by Types - 1936 and 1940

Type	1936 Kilometers (miles)	1940 Kilometers (miles)
Unimproved earth and nonsurfaced	2,200 (1367)	2,065 (1280)
Improved earth, sand, clay, gravel, etc.	4,220 (2622)	3,543 (2199)
Water-bound macadam	50 (31)	639 (397)
Macadam, surface treated and penetration	---	11 (6)
Total	6,470 (4020)	6,258 (3882)

Note: Figures for 1936 were rough estimates; those for 1940 are more exact.

In 1940 there were 875 kilometers (544 miles) of unimproved earth and non-surfaced roads under construction, and 502 kilometers (312 miles) had been projected. Also under construction were 10 kilometers (6 miles) of surface-treated and penetration macadam, and 5 kilometers (3 miles) of concrete roads had been projected.

Main Highways

"Interoceanica Sur," route number 3, runs south from Guatemala City to the important port of San Jose on the Pacific, passing through the towns of Villa Nueva, Amatitlan, Palin, Escuintla, and Masaqua. Route number 3 has a total length of 104 kilometers (66 miles). It parallels the railway practically all the way between its termini.

"Interoceanica Norte," route number 4, runs through the north of Guatemala and passes through the towns of El Fiscal, Progreso, San Agustin Acasaguastlan, San Cristobal, Acasguastlan, Rio Hondo and terminates at Puerto Barrios. Highway number 4 has a total extension of 378 kilometers (235 miles). At the beginning of 1941 about 100 kilometers (62 miles) remained unfinished.

The Al Peten, route number 5, branches off from route number 1 at kilometer 7, that is at the town of La Cuchilla and passes northward through San Pedro, San Juan Sacatepequez, Grandaos, El Chol, Rabinal, Salama, Coban, Sebol, Sayaxche, La Libertad, and terminates at San Benito, which is in the immediate vicinity of the Island of Flores. Highway number 5 has a total length of 473 kilometers (294 miles), 192 kilometers (119 miles) of which are not finished.

Bridges

In the years 1931 through 1940 a considerable amount of bridge construction was undertaken in Guatemala under the regime of the incumbent President, General Ubico. The biggest year as to numbers was 1935, when 137 bridges and drainage structures were built, distributed among 18 departments of the Republic. The next best year was 1936, followed by 1938, and 1939, when 105, 69 and 79 bridges, respectively, were constructed.

During the year 1931 four main bridges were built, all of masonry constructi: These bridges were built at the following locations: one at Seamay, of masonry construction, on the highway between Senahu and Carcha in the Department of Alta Verapaz; a bridge over the Pantaleon River, with a length of 32 meters (105 feet) and a width of 4.8 meters (15.7 feet), on the highway between Escuintla and Santa Lucia Colzamatguapa; another at Sansayo, on the highway between Pinula and Jalapa in the Department of Jalapa; and the Cosillas bridge, on the highway between Barberera and Mataquescuintla, in the Department of Santa Rosa.

Some of the more important bridges in Guatemala are described as follows:

El Puente Grande, over the Villalobos River, constructed of iron and concrete, 38 meters (125 feet) long by 4.9 meters (16 feet) wide, situated in the stretch between Guatemala City and Amatitlan on the highway to the port of San Jose.

The bridge over the Negro River, of masonry construction, 49 meters (160.76 feet) long by 4 meters (13.12 feet) wide, on the highway between Quiche and Sacapulas.

The bridge over the Mopa River, of masonry construction, 53 meters and 30 centimeters (174.86 feet) long by 4 meters (13.12 feet) wide, on the highway de San Rafael Pie de la Cuesta al Tumbador.

Bridge over the Coyolate River, 41 meters (134.51 feet) long by 4 meters (13.12 feet) wide, which is on the highway named "Yepocapa-Santa Lucia Colzcmatguapa."

Puente Ubico, over the Shutaque River, of masonry, iron, and concrete, 84 meters (275.59 feet) long by 4.5 meters (14.76 feet) wide, on the International highway to Honduras via Shupa.

Bridge over the Platanos River of iron and cement, 32.92 meters (108 feet) long by 3.66 meters (12 feet) wide, between Fiscal and Sanarte on the Guatemala City-Progreso highway.

Puente "19 de Julio" over the Samala River, of reinforced concrete, 45 meters (147.64 feet) long by 4.58 meters (15.02 feet) wide, on the Pan American Highway between Totonicapan and San Cristobal.

Bridge over the Villalobos River, of iron and cement, 15.24 meters (50 feet) long by 4.27 meters (14 feet) wide, on the highway to the port of San Jose on the stretch of road between Guatemala City and Amatitlan.

Puente "10 de Noviembre" over the Cacum River, of masonry construction, 100 meters (328.08 feet) long by 7 meters (22.97 feet) wide in the Department of Huehuetenango.

Bridge over the Ostua River, of masonry construction, 45 meters (147.64 feet) long by 4 meters (13.12 feet) wide, in the jurisdiction of San Catarina Mita.

Bridge over Cabuz River, a suspension bridge made of iron, 56 meters (183.73 feet) long and 4 meters (13.12 feet) wide, on the Pan American Highway in the section known as San Pablo-Malacatan-Muralla.

Bridge over the Guastatoya River, of steel and concrete, 40 meters (131.23 feet) long by 6 meters (19.69 feet) wide, on route number 4, between Progreso and Sanarate.

Puente "30 de Junio," suspension bridge, 46 meters (150.92 feet) long by 7 meters (22.97 feet) wide, on the highway between Huehuetenango and Quezaltenango.

Bridge over the Tamazulapa River, of iron and concrete, 134 meters (440 feet) long by 5.5 meters (18 feet) wide, on the Pan American Highway between Asuncion Mita and Frontera.

Puente Concua over the Motagua River, of iron and concrete, 60 meters (196.85 feet) long by 5 meters (16.40 feet) wide, on that section of route number 5 between San Juan Sacatepequez and Concua.

Puente Justo Rufino Barrios, 46.22 meters (151.64 feet) long by 4 meters (13.12 feet) wide, in the jurisdiction of Salcaja on the Pan American Highway.

Bridge over the Sis River, built of concrete, on the Mazatenango-Retalhuleu highway.

Puente Olintepeque, over the Xequijel River, 36.40 meters (119.42 feet) long by 4 meters (13.12 feet) wide, on route number 9 between Quezaltenango and Sija. This bridge has an iron platform, and floor, and railings on reinforced concrete.

Puente Sacapulas (Fray Bartolome de las Casas), over the Negro River, constructed of iron with a roadway of concrete. It is divided into two sections, one 32.70 meters (107.29 feet) long, the other is 31.60 meters (103.67 feet) long and both are 5 meters (16.40 feet) wide. The bridge is located on route number 28 in the jurisdiction of Sacapulas.

Puente Nahuatan, of iron and reinforced concrete, 32.10 meters (105.22 feet) long by 5 meters (16.40 feet) wide, on route number 1, between San Marcos Pajasita, in the jurisdiction of Pajapita.

Puente Cutzulchima, of iron and reinforced concrete, 96 meters (314.96 feet) long by 5 meters (16.40 feet) wide, on number 1, between San Pablo and Malacatan.

Bridge over the Teculutan River, constructed of iron with a wooden floor, 75 meters (246.06 feet) long by 5.20 meters (17.06 feet) wide, on route number 4, in the jurisdiction of Teculutan.

Bridge over Azuchio River, of iron and concrete, 30 meters (98.43 feet) long by 5.50 meters (17.04 feet) wide, also on route number 4, but in the jurisdiction of Brito.

Bridge over the Amatal River, constructed of concrete, 30 meters (98.43 feet) long by 6 meters (19.69 feet) wide, on the Pan American Highway, route number 2, between Asuncion Mita and Frontera.

On February 4, 1941, the Maria Linda Bridge was inaugurated; it is built of iron and concrete, and it extends over the Maria Linda River on route number 6-E. It is 50 meters (164.04 feet) long by 5.50 meters (18.04 feet) wide and cost Q.15,435.42. It has a load capacity of 15 metric tons.

Table No. III, which follows, clearly indicates the progressive construction of drainage facilities in the highways of Guatemala:

TABLE III

Number of Bridges and Other Drainage Structures Constructed, from 1931 to 1940 Inclusive

Department	1931	1932	1933	1934	1935	1936	1937	1938	1939	1940	Totals
Alta Verapaz	4	1	1	4	5	4	5	3	24	3	54
Baja Verapaz	---	---	4	2	1	2	1	2	3	---	15
Chimaltenango	2	---	15	7	15	14	2	4	3	---	62
Chiquimula	---	---	11	3	8	2	5	3	1	---	33
Esquintla	1	3	6	10	6	6	3	5	5	7	52
Guatemala	---	5	---	1	---	3	3	2	3	1	18
Huehuetenango	---	3	---	16	16	8	3	1	1	4	52
Izabal	---	---	1	---	6	---	1	---	5	---	13
Jalapa	5	1	---	---	4	3	---	1	9	3	26
Jutiapa	---	---	---	5	---	4	1	6	---	1	17
Peten	---	---	---	2	---	---	---	---	---	---	2
El Progreso	---	1	---	1	1	4	7	2	---	---	16
Quesaltenango	2	4	---	---	6	14	---	6	6	2	40
Quiche	---	8	15	18	17	4	5	8	2	1	78
Retalhuleu	1	---	---	6	6	3	3	4	3	1	27
Sacatepequez	2	---	---	5	5	7	2	3	1	---	25
San Marcos	1	---	2	24	26	15	3	5	4	---	80
Santa Rosa	1	---	---	1	4	6	4	7	---	1	24
Solola	---	2	8	2	3	---	2	---	---	---	17
Suchitepequez	---	6	---	1	6	---	11	6	8	3	41
Totonicapan	---	---	10	1	2	3	---	---	---	---	16
Zacapa	---	---	---	---	---	3	---	1	1	---	5
Totals	19	34	73	109	137	105	61	69	79	27	713

During the 10-year period of bridge building in Guatemala mentioned above, the Government reported the construction of a total of 713 bridges of all types. These included those of the highest types down to all minor structures such as culverts. While the total amount expended was $354,699, the greater amount was for hundreds of small structures, the individual cost of which was but a few dollar

Below is given the costs of a few of the most expensive structures during the 10-year period reported: In 1931 the most expensive bridge cost only $1,466; in 1932 highest cost was $13,506; in 1933 the most expensive was only $1,014; in 1934 highest cost was $2,725; in 1935 the highest construction cost was $9,523; in 1936 there were no expensive structures, the highest costing only $2,246; in 1937, the most expensive structure was the Tamazulapa Bridge at a cost of $13,913 on the part of the Guatemalan Government; in 1938 the Zacapa Bridge costing $42,149 was completed with four others ranging from $3,480 to $4,312; in 1939 one bridge, the Fran Bartolome de las Casas cost $13,625 and of two others, one cost $9,159 and the other $8,058.

In Latin America, where adequate drainage means so much in the maintenance of roads once constructed, the record of the construction of bridges and subsidiary drainage structures is outstanding even though the total expenditures have been modest.

Pan American Highway

The Pan American Highway has two divisions as it passes through Guatemala, the western and eastern division. Panamericana a Occidente (western division) passes through the towns of Chimaltenango, Solola, Totonicapan, Quezaltenango, San Marcos, San Rafael Pie de La Cuesta, El Rodeo, San Pablo and ends at the Talisman bridge, across the Suchiate River at the Mexican border. This division is known as route number 1 and has a total length of 314 kilometers (195.11 miles). The other division, known as the Panamericana a Oriente (eastern division), passes through the towns of Cuilapa, Jutiapa, Progreso, Asuncion Mita, and San Cristobal, which is at the border near El Salvador. This division is designated route number 2 and has a total extension of 172 kilometers (107 miles). The division point on the Pan American Highway is Guatemala City, and the road running in a westernly and eastern direction from that city.

It is reported that no significant changes took place on the Inter-American Highway during 1940, the latest year for which information is available. During the year some widening of sharp curves and lowering of grades were carried out. Plans were on foot in December 1941 to pave with asphalt the Guatemala-to-Antigua section early in 1942, a distance of 40 kilometers (25 miles). The highway is passable at all times from the Mexican border to that of El Salvador.

PIONEER ROAD

By the term "pioneer road" is meant those stretches of highway which are to be rushed to completion as connecting links between existing constructed sections on the Pan American Highway System; it is concerned with that part of the highways from the border between Mexico and Guatemala to the Panama Canal. The purpose it will serve is to give a through overland route, passable at all times of the year

from the United States to the Panama Canal. It will serve a very definite military as well as commercial need. Guatemala's economic condition is very hard pressed owing to the submarine menace in the Caribbean Sea and Atlantic Ocean, which has completely curtailed the foreign trade of the country at present. The United States is unable to supply Guatemala's needs in the way of gasoline and it can not ship bananas and coffee to the United States. The completion of these stretches of pioneer road may not improve Guatemala's economic position to any great extent but it ought to be a definite advantage to El Salvador, Honduras, Nicaragua, Costa Rica, and the Republic of Panama.

The "pioneer road" in Guatemala leaves route number 1 of the permanent highway at Malcatan going south to Ayutla, from Ayutla it proceeds to the northeast to Pajapita, then it follows a general southeast direction passing through the towns of Coatepeque, Retalhuleu, Mazatenengo, Palmira, Popoya, Santa Lucia Cotzumalaguapa, Escuintla, then it goes northeast again, passing through Amatitlan and on into Guatemala City. The purpose of this relocation was to avoid the high altitudes on the permanent location where peaks of 3,658 meters (12,000 feet) are not uncommon, whereas the maximum altitude on the temporary road does not exceed 990 meters (3,018 feet). Out of Guatemala City the pioneer road follows the Pan American Highway, route number 2, except for stretches that will be relocated. It is very likely that the permanent road at both places will follow the line built. Considerable construction work will be necessary at both places, one stretch lies between El Molino and Jutiapa, the other between El Progreso and Asuncion Mita. Each stretch is between 16 and 24 kilometers (10 to 15 miles) long and has not been improved up to the standard of the rest of the road. Complete relocation at both points is contemplated in order to avoid as much as possible the steep grades of the mountain ridges, on the existing road.

Planning and Financing

The planning and financing of construction and maintenance of highways and bridges are under the authority and jurisdiction of the Direccion General de Caminos (Bureau of Roads) in the Ministry of Agriculture. Street construction and maintenance in the various cities are handled by the municipalities themselves.

In the past about one-half the entire appropriation for the Ministry of Agriculture was devoted to highway construction and maintenance. The appropriation for road work is entitled "For highway construction and improvement on roads of all types and other highway work." As can be readily ascertained from the title of the above appropriation, the expenditures are not broken down to show amounts spent on new construction, repairs, or maintenance. Table IV shows the regular budgeting and appropriations made for highway work in Guatemala during the past 5 fiscal years.

TABLE IV

Appropriations for Highway Work, 1937-38 to 1941-42

Fiscal Year	Regular Budget	Supplementary Appropriations	Totals
	Quetzales	Quetzales	Quetzales
1937-38	304,586.52	100,000.00	404,586.52
1938-39	365,000.00	----	365,000.00
1939-40	446,000.00	32,350.00	478,350.00
1940-41	525,320.00	20,414.00	545,734.00
1941-42	500,000.00	20,277.84	520,277.84

The amounts shown for each fiscal year do not include salaries of officials and employees of the Department of Roads. Neither do they include the "Road Week Labor Tax" which amounts to about 2,500,000 man days per annum. Under the laws of Guatemala every able-bodied male is required to work on the roads one week out of each six months in the year or, in lieu of work, pay the equivalent for a laborer on the roads, which is one quetzal a week or about 0.166 quetzales per day. It is estimated that the annual value of such work performed amounts to 417,000 quetzales

Receipts from certain taxes are allocated to the Ministry of Agriculture, but none are specifically earmarked for highway work. The appropriations for highway work are taken from the funds allocated to the Ministry of Agriculture, as well as the special appropriations made by executive decree.

Table V gives the amounts of the various revenues allocated to the Ministry of Agriculture as compiled in the annual report of Ministry of Agriculture, for the fiscal year ended June 30, 1941.

TABLE V

Revenues of Ministry of Agriculture, for the Fiscal Year Ended June 30, 1941

	Quetzales
Highway tax (paid in lieu of work)	426,565.48
Highway tax, fines	14,494.00
Gasoline taxes	392,443.40
Road tolls	2,703.76
One-half of Livingstone wharfage tax	3,415.24
Sale of explosives	664.70
Miscellaneous	15,030.54
Total	855,317.12

The preceeding table shows the largest source of income for the Agriculture Ministry is from the Highway Tax. The amount shown in the table does not include the value of the actual services performed under the law. Gasoline tax in Guatemal is 10 centavos (100 centavos equals 1 quetzal) per gallon. Although there is no duty imposed on gasoline, it is subject to the consular invoice fee and package tax, which go into the general funds of the Guatemalan Government. Receipts from motor vehicle taxes are allocated to the National Police and the municipalities. Information is unavailable regarding expenditures made by municipalities on street maintenance and construction.

Guatemala, like the other countries in Central America, has agreed in princip to the cooperative plan, but at present the surface of the Pan American Highway, with the exception of two stretches mentioned below, is adequate to meet traffic needs. This surfacing was completed under the 1934 cooperative plan. By way of information, it might be well to give a description of the cooperative plan. Fundamentally, the plan consists of the Central American country's putting up one-third of the funds, with the United States supplying the other two-thirds. The one-third put up by the Central American nation is used for paying local labor and purchasing materials available locally, such as gravel and sand. The other two-thirds is used to purchase equipment, cement, construction machinery, and bridges in the United States and in paying for technical engineering supervision. None of the money, the United States puts up gratuitously is used locally. The only construction contemplated at present under the cooperative plan is that on the Pan American Highway under the "pioneer road" plan in the mountain region in the western part of the country near the El Salvador border.

Materials and Equipment

None of the highways in Guatemala have been built of asphalt or cement, with the exception of the road from Guatemala City to Lake Amatitlan, begun in April 1940 and expected to be completed this year (1942). However, it is expected that very soon the same type of construction will be undertaken on the Guatemala City-to-Antigua section of the Inter-American Highway. The tendency in recent years has been to use domestically made cement in street paving in the country; no foreign cement was used for road construction during 1939, 1940, and 1941. Apparently, it is the settled policy in Guatemala to use only domestically manufactured cement in road building. Table VI shows the imports of asphalt during the calendar years 1938, 1939, and 1940 by value as well as by countries of origin. No asphalt is produced locally.

TABLE VI

Imports of Asphalt, 1938-1940

Country	1938 Quetzales	1939 Quetzales	1940 Quetzales
United States	335	7,609	8,699
Mexico	---	5	1,203
Others	---	1,581	---

The paving done in 1940 and its cost was reported by the City of Guatemala as follows:

TABEE VII

Maintenance and Construction Costs of Streets in Guatemala City - 1940

Type of paving	Square meters*	Cost in Quetzales
Concrete	6,200.24	8,751.42
Asphalt	46,633.99	10,376.59
Macadam with gravel	15,986.00	3,315.67
Total	68,820.23	22,443.68

*One square meter equals 1.196 square yards.

Guatemala City did not do any stone paving during 1940. However, concrete drains constructed during the same year cost 19,060.10 quetzales.

Because of the compulsory labor laws, Guatemala's need for roadbuilding machinery and equipment is not so great as the need in other countries. No highway machinery is manufactured in Guatemala, and the only present source of supply is the United States. In past years considerable road-building machinery was purchased in Germany in exchange for the large shipments of Guatemalan coffee to Germany. This machinery in general proved unsatisfactory, and there was little purchased after 1937. The last important purchase from Germany was made in 1935 and consisted of the items shown in Table VIII.

TABLE VIII

Road-building Machinery Purchased in Germany - 1935

Machine	Number	Total value Quetzales
Mercedes-Benz Diesel trucks 2-ton capacity	19	21,565
Demag shovels of one-cubic yard capacity	2	25,705

Up to the beginning of the European War in 1939, German bridge steel was sold below the price that American firms were able to deliver it for and consequently all Guatemalan needs for this item were supplied from German sources.

The official consensus of opinion in the Guatemalan Highway Department is that the road-building machinery manufactured in the United States is the best obtainable. Even if war conditions in Europe had not shut off the supply of equipment from Germany, it is not likely that any important purchases would have been made from that source.

In former years the United Kingdom was an important supplier of road tools and miscellaneous tools. Early in 1939 a 100-percent customs surcharge was imposed on all future products imported from the United Kingdom, which affected to some extent this trade. Of course, imposts do not apply on materials imported directly by the Government but some purchases are made locally from the stocks of importers. War conditions have adversely affected all trade with England, and most of this trade was diverted to the United States in the period prior to its entry into the war.

In 1941, road-building machinery and equipment manufactured in the United States had become firmly entrenched in the Guatemalan market. Several leading manufacturers had local representatives who kept in constant touch with the requirements of the Guatemalan Government and the municipal government of the city of Guatemala, which are the only customers of any consequence. In Table IX is shown a break-down of the total purchases of Q. 128,683.29 oworth of road equipment and supplies. The amount purchased in Europe was rather insignificant as can be readily seen from the table.

TABLE IX

Purchases of Road Equipment and Supplies, 1941

Item and Origin	Number Quantity	Value in Quetzales
Road Equipment		
From United States:		
Ford Trucks	7	$ 8,709.83
Caterpillar Tractors, rooter, and grader	3	27,270.00
Asphalt equipment		7,570.00
Conveyors	3	2,250.00
Compressor and equipment	1	3,995.00
Hoists	6	392.00
Total		$50,186.83
From Europe:		
Hoists		$ 205.42
Spare Parts:		
From United States		$ 5,719.37
Miscellaneous:		
du Pont explosives		$23,221.25
Structural Steel and bridges, 676,337 lbs.		34,190.93
Office supplies and engineering equipment		2,344.32
Tires and tubes		3,990.84
Miscellaneous		1,448.29
Asphalt, 624,359 lbs.		7,125.23
Total		$72,320.86
From Europe:		
Blue print equipment		$ 249.91
Grand total from United States		$128,227.06
Grand total from Europe		455.33
Total		$128,683.29

Table X shows the registration of motor vehicles by types as of January 1, 1941. Figures are not obtainable on trailers and other special types of trucks.

TABLE X

Registration of Motor Vehicles, as of January 1, 1941

Types	Number
Passenger cars	3,014
Busses	683
Trucks	1,015
Diesel units	112
Total	4,824

In Table XI are shown various types of motor vehicles owned by private individuals and the Government.

TABLE XI

Ownership of Motor Vehicles as of January 1, 1941.

Passenger cars			Busses		Trucks		
Private	For Hire	Government	Private	Government	Private	Government	Total
2,367	399	248	674	9	917	98	4,712

It appears that there are 2,367 private passengers to a total population of 3,283,209 (1940). This gives a ratio of one privately owned passenger car to each 1,387 persons. This ratio compares quite favorably with other countries throughout Latin America.

HIGHWAYS OF GUATEMALA

LEGEND

- PAN AMERICAN HIGHWAY
- NATIONAL HIGHWAYS
- DEPARTMENTAL HIGHWAYS
- PROJECTED HIGHWAYS
- TRAILS
- RAILWAYS
- MAJOR PORTS

0 25 50 75 Miles

1 Mile = 1 609 Kilometers

U. S. DEPARTMENT OF COMMERCE
BUREAU OF FOREIGN AND DOMESTIC COMMERCE

D.D. 42-440

THE REPUBLIC OF EL SALVADOR
(La Republica de El Salvador)

The Republic of El Salvador, the smallest of the Central American countries, undertook to throw off the yoke of Spain, the mother country, as early as 1822. After setting up an independent form of government, it joined the Central American Federation. A constitution, the first in Central America, was adopted on June 12, 1824. Because of disagreements and disorders, the Federation was dissolved on January 31, 1841, and El Salvador itself had many political difficulties during the first 60 years of its independence. Liberals and conservatives vied for power within the republic, and altercations sometimes arose with neighboring countries. Despite these conflicts, the people of El Salvador are peace loving and have lived for many years with no serious trouble either internally or externally.

The principal ports are La Union, La Libertad, and Acajutla; the first-mentioned is on the Bay of Fonseca and the other two are on the Pacific Ocean. San Salvador is the port of entry and exit for international air traffic.

About 378 miles (608 kilometers) of narrow-gage railways serve the country. An English-owned line connects the port of Acajutla with Santa Ana, Sonsonate, and San Salvador. The International Railways of Central America (American-owned) runs from the eastern port of La Union to the western boundary of Salvador and extends across Guatemala to Ayutla on the Mexican border on the west and to Puerto Barrios on the northern coast.

The capital is San Salvador, with a population of 107,859 (in 1940). It is centrally located, and is fairly accessible to all modes of land transportation. Other important cities are: Santa Ana, with 88,612 inhabitants; San Miguel, 47,835; Santa Tecla, 34,941; Ahuachapan, 32,962; San Vicente, 30,722; Zacatecoluca, 28,762; and Sonsonate, 21,775.

The monetary unit is the colon (symbol ¢), which is divided into 100 centavos. The approximate exchange rate for the colon in terms of United States currency during 1939 and 1940 was 40 cents.

Spanish is the native tongue and is spoken more than any other language.

GEOGRAPHY AND CLIMATE

The area of El Salvador is about 34,000 square kilometers (13,176 square miles). Of the Central American countries, El Salvador is the only one that does not touch the waters of both the Atlantic and Pacific Oceans. It is bounded on the north by Guatemala, on the east by Honduras and the Gulf of Fonseca, and the south by the Pacific Oceans, and on the west by Guatemala. The coast line of El Salvador is approximately 257 kilometers, or 160 miles. Two mountain ranges traverse El Salvador, among which there are numerous valleys of great fertility. The largest and most important river flowing through this country is the Rio Lempa, which crosses the country from the northwest eastward to the Honduras border, thence southwestward to the Pacific.

The climate varies according to location; for example, the climate is tropical in the lowlands, semi-tropical in the plateau region, and temperate on the upper mountain slopes. The maximum and minimum temperatures average 85 and 50 degrees Fahrenheit, respectively. In the interior of the country it is very warm during the day, but the nights are considerably cooler. At the higher altitudes both the days and nights are quite comfortable.

The year is divided into two seasons, the wet and the dry. The wet period extends from June to December, and the dry, the remaining months. The rainfall varies from 150 centimeters (60 inches) per year along the coast to 120 centimeters (50 inches) in the interior. During the dry season there is practically no rainfall.

GOVERNMENT

The Government of El Salvador is similar in many ways to that of the United States. It is republican, democratic, and representative in form. As mentioned previously in this survey, El Salvador was the first of the Central American countries to adopt its own constitution. The last constitution was adopted on January 20, 1939, but many provisions were retained in it from the one of 1886. Many other constitutions were adopted by El Salvador previous to the last mentioned, but for one reason or another they passed out of existence.

As in the United States, the Government is divided into three divisions; the Executive, the Legislative, and the Judicial.

The Executive branch is headed by the President who is elected for a term of 6 years and is ineligible for immediate reelection. The President has a number of ministers, whose duty it is to advise him on matters of state. There are certain stringent qualifications which one must have before he can be elected to the presidency. He must be a native-born Salvadoran, the son of native-born citizen, at least 35 years of age, and in full possession of his civil rights. The President is also, as in the United States, Commander-in-chief of the Army. There is no vice-president, instead three designados are elected by the National Assembl each year. The function of the designados is to substitute for the President in the event that he is unable to perform his duties. If for any reason the President becomes indefinitely incapacitated, one of the designados is picked to fill the office until his return. In case the President is unable to return, however, new elections must be held.

The Legislative powers are vested in a unicameral National Assembly, which serves in much the same way as the Congress of the United States. To mention a few of the many powers delegated to the National Assembly, it may make laws, contract loans, levy taxes, regulate the coining and value of money, fix the budget, and declare and ratify treaties. If the President vetoes a law, the National Assembly can pass it over his veto by a two-thirds' vote.

The Judicial powers are vested solely in the Supreme Court of Justice and in lower courts, which are established by the Constitution or by law. There are also military tribunals which act only on the infractions of the military laws.

Education is free and is compulsory in the primary grades.

Free religion is guaranteed by the Constitution, although the majority of the people follow the Roman Catholic Faith.

POPULATION

Even though El Salvador is the smallest of the Central American countries, it is the most densely populated. The population is exceeded among the American Republics by Haiti alone. The population numbers approximately 1,787,930 as of December 1940, or an average of 136 persons per square mile. In the United States these figures would be about in the same ratio as that of the State of Illinois. The majority of the people live in rural sections, the percentage being about 62, and the remaining 38 percent live in the urban sections.

INDUSTRY

The economic structure of El Salvador is based almost wholly on agriculture. Mining and manufacturing do exist to a limited degree, but the people depend mainly on agriculture for their sustenance.

Coffee is the most important crop. The country is well suited for this commodity because of the natural conditions of soil, altitude, and climate favor its cultivation. The raising of coffee has been dominant in the economic life of the people of El Salvador since its introduction over a century ago. The value of the coffee exports during the last 5 years represented 88 percent of the total. No other country in the world is more dependent upon a single commodity. Some coffee is grown in all the 14 Departments of the country, but the chief growing regions are located in Santa Ana, La Libertad, Usulutan, Ahuachapan, and Sonsonate. The United States imported about 65 percent of the total amount of 55,792 tons exported in 1939, the value of which was $10,657,000. Coffee, however, while the most important crop, is not the only agricultural resource of the country.

Some of the other products are: sugar, balsam, henequen, and rice, all of which are exported. Corn, beans, millet, and wheat are grown for domestic use.

Cane sugar is next in rank to coffee as an agricultural export product. Sugar production is estimated to total about 30,000 tons annually. This amount covers domestic needs and allows from 5,000 to 6,000 tons for export.

Stock raising is important and is carried on in practically all sections. The large cattle centers are located in the coastal lowlands. The greater part of the hides and skins of the animals killed are used in the domestic shoe factories and tanneries, although a small amount is exported.

Gold and silver are mined, and, from the point of value, they are second only to coffee in the export movement. Some of the other minerals which are reported to exist are lead, copper, iron, zinc and lignite.

. Manufacturing is carried on to a certain degree, but this field is limited, and most of the goods are for domestic consumption. Among the more important manufacture are shoes and leather goods, handicraft articles, flour, alcohol, beer, textiles, soap, candles, brick, and cement. Hats and jewelry are made in small plants. The country is almost entirely dependent upon imports for machinery and industrial goods.

IMPORTS AND EXPORTS

Current statistics with regard to foreign trade are not available, but the following figures for custom receipts for the first 8 months of 1940, 1941, and 1942 will serve to indicate the trend of foreign trade.

	1940	1941	1942
Imports	$2,594,463.30	$2,299,951.68	$2,267,769.30
Exports	494,636.54	332,963.53	504,822.88
	$3,089,099.84	$2,632,915.21	$2,772,592.18

It might be said of El Salvador, that in spite of the size of the country, in foreign trade it has done better than hold its own. As can be seen from the above table, imports for 1942 declined slightly, but exports for the same period increased.

The principal exports of El Salvador are coffee, gold and silver, sugar, cotton, and henequen fiber. Exports of henequen fiber have been halted, owing to its importance as a strategic commodity.

El Salvador imports many products, such as automobiles, trucks, automotive supplies, chemicals, medicines, fertilizers, and soaps. The automobile-and-truck-supply imports have been greatly reduced by the war, and it is doubtful if they are receiving any at the present time.

CONCLUSION

The extensive highway-building program in El Salvador has proven beneficial to both the inhabitants and to the country.

Work on the highways has afforded many people employment, and the roads have been a means of transporting various commodities to the markets.

In many areas of El Salvador, contact with the outlying sections would not have been possible, were it not for the highways. Also the produce grown in these areas would have been lost with out them, since there was no other way of getting it to the markets. Economically, improvements in highways and the construction of new roads throughout the country have added immeasurably to the wealth of El Salvador.

With the improvement of the highway system has come an increase in tourist travel. Automotive transportation has also increased, as a result of the betterment of traveling facilities within the country.

The most important service the highways can render at the present time is to aid in the defense of the country. In case of an invasion, men and weapons can be moved to practically any part of El Salvador within a very short time.

The improvement in the highways has also helped to develop a more neighborly and friendly feeling among the Central American countries.

When the Pan American Highway is completed cordial relations, racial understanding, good neighborliness, and the unlocking of economic wealth will result.

THE HIGHWAYS OF EL SALVADOR

ROAD MILEAGE BY CONSTRUCTION TYPES

The improvement of highways in El Salvador has been steadily on the upward trend, since the first meeting of the Pan American Congress of Highways back in the early twenties. El Salvador is far ahead of the other Central American countries in its program for road improvement.

In 1926 a Bureau of Roads was created in the National Government, and an extensive program for highway construction was begun. A further change with regard to highway activities was made in 1933. This latter change placed construction and maintenance of trunk, or arterial roads, under the National Government. Local roads were placed under Departmental commissions, and the municipalities were made responsible for streets and roads within their respective jurisdictions.

Most notable in the National Government's highway program is the construction of the Pan American Highway, which will run the entire length of the country. A description of this highway will be given in a separate section of this survey.

Feeder roads connecting interior towns with the railroads and the arterial highways, and in a few cases maritime and river ports, come under the departmental system. In 1941, the entire national and departmental network of highways totaled 5,937 kilometers (3,691 miles). Of this mileage only 2,639 kilometers (1,640 miles) are unimproved, compared with 4,500 kilometers (2,796 miles) in 1936. Table I, which follows, shows the types of roads in existence in 1939, 1940, 1941, and 1942.

TABLE I

The Roads of El Salvador by Types For the Fiscal Years 1939, 1940, 1941 and 1942

	1939		1940		1941		1942	
Types	Kilometers	Miles	Kilometers	Miles	Kilometers	Miles	Kilometers	Miles
Unimproved earth and nonsurfaced	1,670	1,037	3,281	2,038	3,281	2,038	3,171	1,972
Improved earth, sand, clay, gravel, etc.	2,361	1,467	2,367	1,470	2,288	1,422	2,295	1,427
New highways ready for paving	---	---	---	---	---	---	106	66
Waterbound macadam	---	---	9	6	9	6	---	---
Macadam, surface-treated, and penetration	188	117	217	135	274	170	295	183
Bituminous concrete and asphalt	32	20	32	20	32	20	32	20

Statistics for cement concrete, block-stone, wood, asphalt, and brick and for all highways not specified are not available, and it is believed that there are none which enter in these classes for 1939, 1940, 1941 and 1942.

With regard to the unimproved earth and nonsurfaced highways, slightly more than two-thirds of these are municipal, while the remainder are national or departmental. Most of the municipal roads are in poor condition.

PLANNING AND FINANCING

National roads are planned, constructed, and supervised by the Department of Public Works of the Central Government. The planning and construction of Departmental roads are supervised by the various Departmental governments, usually in cooperation and often with the assistance of the Department of Public Works. Municipal roads are constructed and maintained by the municipal governments, with the exception of streets in San Salvador and Santa Ana, which are constructed by the Department of Public Works.

TABLE I

Expenditures by the Central and Departmental Governments for the calendar year of 1938, and first 11 months of 1939

Central Government	Calendar Year 1938	First 11 months 1939
Construction	$532,150.30	$ 595,272.20
Maintenance	54,543.17	49,930.88
Machinery and Equipment	14,611.17	84,236.84
Totals	$601,304.64	$ 724,439.92
Departmental Governments		
Construction	$ 11,261.74	---
Maintenance	95,386.63	$ 100,798.96
Total	$106,648.37	$ 100,798.96
Grand totals	$707,953.01	$ 825,238.88

TABLE II

Expenditures by the Central and Departmental Governments from July 1, 1940 to June 30, 1941, inclusive.

Construction	$ 924,692.00
Maintenance	163,297.00
Total	$1,087,989.00

The figures given in Table II represent expenditures of the National and various Departmental Governments. Expenditures for municipalities are not available, although they are known to be small.

Sources of Funds and Amounts

The sources of funds for road building and maintenance are derived in various ways. Appropriations are made by the Legislative Assembly from general revenues. There are different kinds of special taxes, such as highway tax, the road-paving tax, and taxes of "aguardiente" distilleries, steamship tickets, insurance companies, and miscellaneous taxes, all of which are supposed to be indirectly applied to road building. These last-mentioned taxes represent only an insignificant part of total expenditures on highways.

Road Budget for Current or Fiscal Year

The budget year for El Salvador has been changed from July 1, through June 30, to the calendar year. The appropriation as provided for in the budget for 1941 was $658,800.00.

Materials and Equipment

Practically all materials and equipment used in highway construction in El Salvador are imported from the United States. Owing to the important part the United States has played in the road-building program of El Salvador, many United States manufacturers of road machinery and equipment are represented there. Imports of cement for roads have come in the past from Europe, but since the war this source has been almost cut off. The General Supply Office of the Salvadoran Government has been exploring the possibility of obtaining cement from some of the South American countries. Cement used in bridge and culvert construction is imported from the United States. In Table III, which follows, a few import figures are given for the period from July 1, 1940, to June 30, 1941.

TABLE III

El Salvador: Imports of road-building Materials, July-June 1940-41

Item	Amount	Value	Country
Asphalt	2,000 tons	$ 44,250.00	United States
Cement	36,000 bags	24,535.00	Sweden
Small tools	negligible	4.30	United States

Trucks which are a vital part of the road-building program are also imported from the United States.

The importation of large units of heavy machinery for building has been much curtailed, the main reason for this being the lack of available shipping. In building roads this large machinery has to be moved from place to place, which adds difficulties to the completion of projects.

TABLE IV

Imports of highway construction materials and equipment for 1938 and the first 6 months of 1939

	Gross kilos (1 Kilo equals 2.2 lbs.)		Value Colones (1 colon equals 40 U. S. cents)		Value Dollars
Asphalt in unspecified forms:					
Germany	97,775		6,005		$2,402
Belgium	833		100		40
United States	2,742,626		164,463		65,785
Panama	1,298		---		---
	2,842,532	¢	170,568		$ 68,227
Machinery, unspecified, combined or not with mechanical tools, for highway construction:					
United States	47,912	¢	34,948		$ 13,979
Great Britain	1,219		1,197		478
Switzerland	1,298		613		245
	50,429	¢	36,758		$ 14,702
Dredges of all kinds:					
Steam shovels, and other excavators:					
United States	1,523		4,024		$ 1,610
France	808		592		236
	2,331	¢	4,616		$ 1,846
Concrete mixers:					
Great Britain	153	¢	188		$ 75
Italy	635		771		308
	788	¢	959		$ 383
Steam rollers:					
United States (only)	398	¢	1,517		$ 606

2-15463

Table (Continued)	Gross kilos		Value Colones		Dollars
Derricks:					
Germany	8		423		169
Switzerland	1,424		1,167		467
	1,432	¢	1,590	$	636
	1939				
	(First 6 months)				
Asphalt in unspecified form:					
United States (only)	530,172	¢	30,057	$	12,022
Machinery unspecified, combined or not with mechanical tools, for highway construction:					
Germany	1,185	¢	5,121	$	2,048
United States	14,703		4,914		1,965
Great Britain	4,316		3,299		1,320
	20,204	¢	13,334	$	5,333
Steam rollers:					
United States (only)	25		131		52

In the month of August 1939 the Ministry of Public Works imported $44,000 worth of road equipment not shown in the above table.

THE PAN AMERICAN HIGHWAY

At the Fifth International Conference of the Pan American States, which was held at Santiago, Chile, in 1923, the first official recognition of the need for improved highway communications in Latin America was expressed.

It was not until October 1925 that the First Pan American Congress of Highways was held. The Congress met at Buenos Aires, and it was as a result of this meeting that plans for the Pan American Highway were begun.

LENGTH

The highway will run the full length of El Salvador, connecting it with Guatemala on the west and with Honduras on the east. The length of the highway through El Salvador will be 323.47 kilometers, or (201 miles).

Construction

Progress on the Pan American Highway has been exceptionally good. Of the total length of the road, better than two-thirds have been paved with penetration asphalt, or from the Guatemalan frontier on the west to Sirama on the east. The eastern end of the highway is now being rushed to completion from Sirama to La Union and from the junction at Sirama to the Goascoran River on the Honduran frontier. The entire highway is passable, and the western section has been in use for several years. The United States has been the main source of supply for materials and equipment needed in the building of the road.

Bridges

All the important bridges in El Salvador are on the Pan American Highway, the most important of which is the bridge over the Rio Lempa River. It is estimated that the total cost of this bridge was $700,000. The bridge alone was estimated to have cost $450,000, but including approaches to the bridge and foundations, the first mentioned figure is thought to be more exact. The location of the bridge is 104.60 kilometers (65 miles) east of San Salvador. It is a suspension bridge, having a length of 320 meters (1,049.86 feet), constructed of structural steel and cement, and is suspended by steel cables; there are 3 spans (between piers) and there are four piers. The bridge is now in use, having been opened on June 6, 1942, and christened "Puente Cuscatlan." A bridge over the Goascoran River at the Salvadoran and Honduran border is now under construction. Its use will be very vital to both Honduras and El Salvador in the defense of these countries, and also it will be of great importance as to the economics of the two countries. There will be at least six or seven other bridges throughout the country, possibly more, provided the necessary materials can be obtained.

Financing

In financing the construction of the Pan American Highway, El Salvador received a loan of $1,196,000 from the Export-Import Bank of the United States.

The predominant factor in the financing of the highway is the two to one ratio. The larger portion of the expense is being borne by the United States.

The Salvadoran portion of the expense of the highway is being used mainly for the purchase of available local materials, and for providing the labor.

The construction of the bridge over the Rio Lempa River was paid for entirely by that country, without outside assistance.

The Treasury Department has asked the national legislature to proclaim taxes on vehicles passing over the Rio Lempa Bridge, the funds to be used in the maintenance and construction of roads throughout the country, as well as for the repair and maintenance of the bridge and the Pan American Highway.

Degree of Completion

While the progress on the highway in El Salvador has been excellent, it is hoped that the road will be completed by the middle of 1943, but due to the difficulty in obtaining materials, it may take longer.

Route

The Pan American Highway passes through the commercial centers of Santa Ana, Santa Tecla, San Miguel, and Sirama, located along the line of densest population. There is a branch running from Sirama to La Union, connecting the port with the Pan American Highway, the length of which is 16.09 kilometers (10 miles). These cities with their mileage from San Salvador are given in Table I, which follows:

TABLE I

Important Cities Along the Route of the Pan American Highway, With Mileage from San Salvador

Cities	Distance	
	Kilometers	Miles
Santa Ana	66.50	41.32
Santa Tecla	12.00	7.45
San Miguel	139.51	86.68
Sirama	144.84	90.00

There are also a number of small towns through which the highway passes, but which are not very significant, and consequently are not shown in the above table.

Strategic Materials

Henequen is the most important strategic commodity produced in El Salvador. The Pan American Highway could be used for its transportation, since it runs through the area where this commodity is grown. At the present time henequen is not being exported from El Salvador except that used in bags in which coffee

is exported. In 1936 the United States imported 2,365,000 pounds, and in 1937, 2,261,000 pounds. Because of the war, all exports of henequen fiber have been halted. The estimated production of henequen for 1942 is 4,500,000 pounds.

The small quantities of strategic minerals mined in El Salvador would not be transported on the Pan American Highway to any great extent, since the mines are off to the north in the Metapan District, near the Guatemalan border.

Importance to National Highway System

The Pan American Highway is of the utmost importance to El Salvador and to the national highway system of the country. It is a direct route through the country, and it serves as a link between the commercial centers and San Salvador, and with adjacent countries. It represents the backgone of El Salvador's highway system. Vehicles using the Pan American Highway have not been restricted as to type.

THE PIONEER ROAD

The term, "pioneer road," designates those stretches of highway which are to be rushed to completion as connecting links between existing points on the Pan American Highway System, and is concerned with that part of the highway from the border between Mexico and Guatemala to the Panama Canal.

The "pioneer road" is extremely important at this time, it will serve in a temporary commercial capacity, and in a military way for the moving of men and arms in case of an invasion. It might also be said that the "pioneer road" will greatly help El Salvador in an economic way.

Through El Salvador the "pioneer road" practically laps the Pan American Highway southeastward to San Miguel, where it branches in a norotheasterly direction to Santa Rosa, a distance of 40.23 kilometers (25 miles), from whence it runs in a southeasterly direction for a distance of about 16.09 kilometers (10 miles), and then it follows the route of the Pan American Highway to Goascoran for a distance of about 16.09 kilometers (10 miles).

The route to be followed by the "pioneer road" as a diversion from the Pan American Highway is an easy one and is in fairly good shape, requiring only a surface of gravel.

MAIN HIGHWAYS OF EL SALVADOR

The data on lengths of the main highways throughout El Salvador vary slightly fromm other estimates issued from time to time. In Table I, which follows, the approximate length of the main highways, excluding the Pan American Highway and the "Pioneer Road," are given.

TABLE I

Approximate lengths of main highways throughout El Salvador

From	To	Kilometers	Miles
San Salvador	La Libertad	36	22
San Salvador	Sonsonate Acajutla	91	57
Santa Ana	Auachapan	42	26
San Miguel	Divisadero-Santa Rosa	40	25
San Salvador	Zacatecoluca	98	61
San Salvador	Chalatenango	43	27

SAN SALVADOR - LA LIBERTAD

La Libertad is one of the three important ports of El Salvador, and it is linked to San Salvador by one of the finest highways in the country.

The highway runs directly south to La Libertad. At San Salvador the highway intersects the Pan American Highway.

Constant use of the highway for heavy traffic to and from the port necessitated that it be built to stand wear. The highway is paved with penetration asphalt, it has a 6 meter roadway, and a 20-meter right-of-way.

Because of the connection of the road with the port, it is considered one of the more important roads of the country. The highway might be referred to as a trunk branch of the Pan American Highway.

The road is wide enough to take care of two lanes of traffic, and there are no restrictions fixed as to the type of vehicles passing over it.

SAN SALVADOR - SONSONATE - ACAJUTLA

Acajutla is located on the Pacific Ocean in the southwestern part of El Salvador. Although one of the important ports of the country, its connection with San Salvador is at present not so good as that of La Libertad.

The road is earth at this time, but it is to be improved with funds which have been borrowed from the United States Import-Export Bank. While an important road because of its connection with the port, its main use is for transporting goods to and from the port. It is also used by the people living in that area.

The route of the highway from Sonsonate to Acajutla is almost directly south. From Sonsonate to San Salvador there are several ways one could go, one of these runs north of Sonsonate to Santa Ana and connects with the Pan American Highway eastward to San Salvador. Another route to San Salvador from Sonsonate is a dirt road from Sonsonate through a number of small towns of rather minor importance and over to San Salvador in an easterly direction. The latter route, while it is no doubt the shorter, might not offer as smooth riding as the first.

The importance of the road from Sonsonate to Acajutla to the rest of the network of highways throughout El Salvador, is one which affects the economy of the country, and which serves to expedite transportation by water.

SANTA ANA - AUACHAPAN

Auachapan is the capital of the Department of the same name; it is connected with Santa Ana by a dirt road. Santa Ana is on the route of the Pan American Highway and is accessible by highway to any number of towns or cities in El Salvador.

The highway from Auachapan to Santa Ana runs in a northeasterly direction. It does not run through or touch any towns of great importance; at Santa Ana it connects with the Pan American Highway.

Auachapan is located in the heart of the coffee, sugar cane, and grain-growing region. The road is very essential to the marketing of these commodities, and as a result of its location it is one of the more important highways of the country.

SAN MIGUEL-DIVISADERO - SANTA ROSA

The highway from San Miguel to Santa Rosa is the route which at first the Pan American Highway was to follow; however, after some discussion the route of the Pan American Highway was changed as is shown in the Pan American section of the survey.

The road from San Miguel to Santa Rosa is at the present a dirt road, but is being prepared for a hard surface. Work on the highways in this section of the country is more or less being rushed so as to complete the Pan American H ighway at the eastern end.

The road will be very beneficial to the people living in this area, as it will be a means of transportation for the moving of commodities grown there, and, too, it will afford them a way of travel to other parts of the country.

As for the importance of this road to the rest of the network, it is needless to say that it will serve in many ways. Tourist travel will be benefited by the completion of the highway, and numerous other benefits will be derived by its completion.

SAN SALVADOR - ZACATECOLUCA

Zacatecoluca is the capital of the Department of La Paz. It is an important commercial center, located in the heart of the agricultural area.

The need for a good highway to connect Zacatecoluca with San Salvador was felt, and in 1940 the construction of such a highway was begun. At the close of 1940 there were 40 kilometers, (24.85 miles) paved, and the remaining mileage was graded and ready for paving. The highway is passable at all times, during both the west and the dry seasons.

The highway runs in a southeasterly direction from San Salvador and passes through a number of small towns or cities. Some of these are San Marcos, Saint Tomas, Olcuilta, El Rosario, Santiago, San Juan and Zacatecoluca. At San Salvador the highway joins the Pan American.

Its importance to the entire network of roads in El Salvador is apparent from its location. One of the outstanding features of the road is its value as an artery for the transport of agricultural commodities throughout the country. Some of these commodities are coffee, corn, sugar cane, and vanilla. The road is also used for tourist travel.

SAN SALVADOR - CHALTENANGO

Chaltenango is the capital of the Department of the same name. Work was begun in 1940 on the construction of a road from San Salvador to Chaltenango and northward into Honduras.

The highway will run almost due north to Chaltenango, and from there it goes westward to S. F. Morazan; thence it goes north again into Honduras. It touches the towns of Apopa, Quazapa, before reaching Chaltenango.

Chaltenango is in an agriculture area, the chief produce of which is millet.

The highway can be traveled on in both the wet and dry seasons. It use to transport commodities which are grown in the area is of primary importance, but it also serves as an alternate route to Honduras.

MISCELLANEOUS

While it has been impossible to obtain the exact widths of all of the highways throughout El Salvador, it is known that they are wide enough to care for two lanes of traffic.

There are practically no viaducts or underpasses on any of the roads with the exception of the Pan American Highway.

No restrictions have been placed on the type of traffic using the highways.

Bridges

On the San Salvador to Zacatecoluca highway, a bridge was constructed over the Jalponza River. The bridge is built of steel and cement, is 30.48 meters (100 feet) long and 6 meters (19.68 feet)wide. The total cost of the construction of this bridge was 40,000 colones (16,000 dollars).

The highways throughout El Salvador cross many small rivers and streams; consequently, the construction bridges has been necessary, but information regarding these bridges is not available.

There have been a number of bridge-construction jobs proposed, but owing to the war and the difficulty in obtaining materials, these projects have more or less been laid aside until such materials are obtainable. The bridges on the Pan American Highway are being completed without any difficulty, because materials are obtained by priority ratings. The most important and the largest bridge on the Pan American Highway is the "Puente Cuscatlan" which was constructed over the Rio Lempa. A full description of this bridge has been given in the Pan American Section of the survey. The bridges on the other roads are mostly of concrete, with one span, and carry a load of 20 tons.

Most of the materials used in bridge construction are imported from the United States. Since the war very little material has been imported, and as a consequence bridge construction is more or less at a standstill.

Culverts

While it is known that the drainage of highways is by culverts, information regarding the structure of these is not available at this time. It was stated in a recent report that cement for the construction of culverts is imported from the United States.

MINERALS

Gold and Silver

In the eastern Departments of San Miguel, Morazan, and La Union gold and silver mines are found, which have been one of the chief sources of income for the people of El Salvador. These minerals have no special strategic value. In Table I which follows, exports of gold and silver for the years of 1938, 1939, 1940, and 1941 are given in value only.

TABLE I

Exports of Gold and Silver from El Salvador for 1938 through 1941

	1938	1939	1940	1941
Gold exports	$436,000	$575,000	$1,792,000	$1,156,000
Silver exports	24,000	85,000	61,000	87,000

Other Minerals

In the Metapan District of the Department of Santa Ana, near the Guatemalan Border, there is some mining of iron, lead, copper, and zinc. These minerals are obtained in such small quantities that as a source of income they are negligible. The small amounts mined are used only for domestic consumption. Occasionally there have been roads built to move the minerals from the mines to the main highways, but these roads are short and are maintained by the operators of the mines.

Scattered throughout many areas of the country there have been found traces of coal, petroleum, mercury, asbestos, and limestone, but there has been no endeavor to develop these deposits except for domestic use.

RATIONING OF GASOLINE AND TIRES IN EL SALVADOR

Gasoline

Automotive traffic has been greatly curtailed throughout El Salvador during the last 6 months of 1942, because of the need for rationing gasoline and tires.

The sale of gasoline is being restricted to all types of automobile transportation, except that which is vital to the national economy of the country. Outstanding coupons and licenses will remain in force, but no more will be issued except for gasoline for doctors, official cars, diplomatic corps and career consuls, milk transportation, priests, funeral cars, and the maintenance of public utility services, such as the generation and transmission of electricity. At present one of the most important uses of gasoline for automotive transportation is in the moving of the coffee crop from plantations to the mills, to railroad stations, and to the ports. It is hoped that with the enforcement of the rationing of gasoline at least 50 percent of the customary consumption can be saved.

Tires

Tires for automotive transportation are being rationed through the Mortgage Bank of El Salvador. Licenses for the purchase of automobile tires must be secured from the Salvadoran Committee of Economic Coordination. The purchaser of a new tire is compelled to turn in an old tire for each new one purchased. As yet there have been no restrictions put on the sale of bicycle tires.

REGISTRATION OF MOTOR VEHICLES AS OF JANUARY 1, 1941

As a result of the improvement in highways, motor-vehicle registration showed a substantial increase as of January 1, 1941, in El Salvador. In Table I which follows the number by type of vehicle is given.

TABLE I

Registration of Motor Vehicles in El Salvador as of January 1, 1941

Type	Number registered January 1, 1941
Passenger cars	2,195
Busses	469
Trucks	415
Diesel	55
Total all types	3,134

Since the war, and with the rationing of gasoline and tires, there has been a slight decrease in the figures shown above. There are no available statistics showing the registration of motor vehicles as of the present.

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REVISIONAL EDITION

HIGHWAYS OF EL SALVADOR

BOARD OF ECONOMIC WARFARE

PAN-AMERICAN HIGHWAY
TO BE SURFACED
PROJECTED
NATIONAL HIGHWAYS
RAILWAYS
BRIDGES
PORTS

0 5 10 15 20 25
MILES

UNRESTRICTED

90 89 88

14

GUATEMALA

To Juliapa
To Guatemala City
San Cristabal
Metapan
Citala
S. Fernanda
Chalatenanga
Tejutla
Santa Ana
Ahuachapan
Caatepeque
Sensuntepeque
S. Isidro
Sansanate
Bebedera
SAN SALVADOR
Santa Tecla
Cojutepeque
Santa Domingo
San Francisca
Santa Rasa
To Nacaome
San Vincente
Mercedes
Jucuapa
San Miguel
Acajutla
La Libertad
Zacatecaluca
Sirama
La Unian
Cutuca
Cancardia
La Herradura
Usulutan
El Triunta
Jucuaran

PACIFIC OCEAN

90 89 88

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